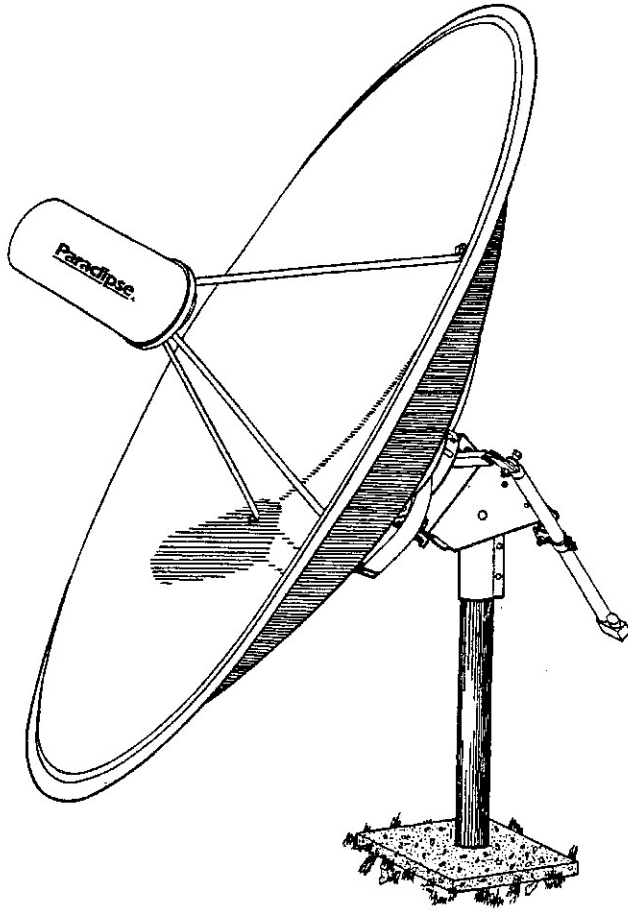


Paraclipse®

HIGH PERFORMANCE ANTENNAS

Your Complete Reflector Source



Paraclipse®

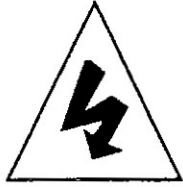
HYDRO

7.5' DP

**INSTALLATION &
ASSEMBLY INSTRUCTIONS**

FILL OUT WARRANTY CARD PROVIDED AND RETURN TO PARACLIPSE TO SECURE VALUABLE EXTENDED WARRANTY RIGHTS.

Welcome to the world of satellite television and your Paraclipse satellite antenna



This symbol is intended to alert you of the presence of unusually dangerous voltage within the unit's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



This symbol is intended to alert you of the presence of important operating and maintenance instructions in the literature accompanying the unit.

WE RECOMMEND THE FOLLOWING:

1. **Site location:** THIS IS EXTREMELY IMPORTANT! We recommend that the site survey be performed by qualified personnel to ensure proper antenna location and to test for microwave interference.

2. Read the instructions thoroughly prior to assembly so that you may become more familiar with our method of installation.

3. Please keep this assembly instruction manual for future reference. The information below and inside this manual will help you when ordering replacement parts and with questions you may have about your antenna.

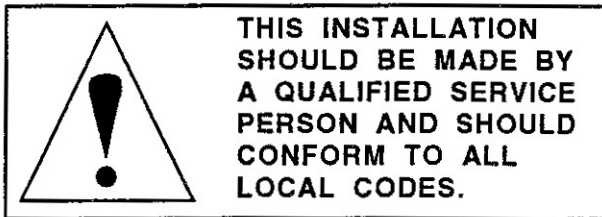
MAINTENANCE AND OPERATION:

The condition of your antenna should be checked at least once a year and after severe weather conditions. Replace or tighten any loose or missing hardware, watch for signs of rust on steel components and provide proper protection. Inspect weather protection for electronics and motor drive and perform any maintenance called for by motor drive manufacturer.

Check site location for any obstruction to movement of antenna and clear branches, etc. as needed.

ANTENNA SHOULD BE PLACED IN A STOWED POSITION FOR HEAVY STORMS, SNOW OR LONG UNATTENDED PERIODS OF TIME. THE STOWED POSITION IS WITH THE ANTENNA POINTED AT EITHER HORIZON.

Please fill out warranty card provided and return to **Paraclipse**.



Write the serial number of your antenna, the date of purchase, and the name, address and phone number of your **Paraclipse** dealer. The serial number can be found on ends of packaging boxes; on antenna mount; and on the packing list packed with the antenna.

Serial #: _____

Date Purchased: _____

Dealer: _____

Telephone: _____

Paraclipse[®]

HYDRO

Manufacturer's Note

A home satellite antenna system is extremely difficult to correctly install without proper training and specialized equipment. It is therefore recommended that installation be done by an authorized dealer.

Before starting installation, check applicable local building codes and restrictions.

TOOLS:

- 1) 7/16" open end wrench
- 2) 1/2" open end wrench
- 3) 9/16" open end wrench
- 4) 3/4" open end wrench
- 5) 15/16" open end wrench
- 6) Adjustable crescent wrench
- 7) Compass
- 8) Inclinometer (optional)

MATERIALS:

- 1) 3.5" o.d. x 7' pipe (3" schedule 40 black pipe)
- 2) Approximately 2/3 cubic yard of concrete

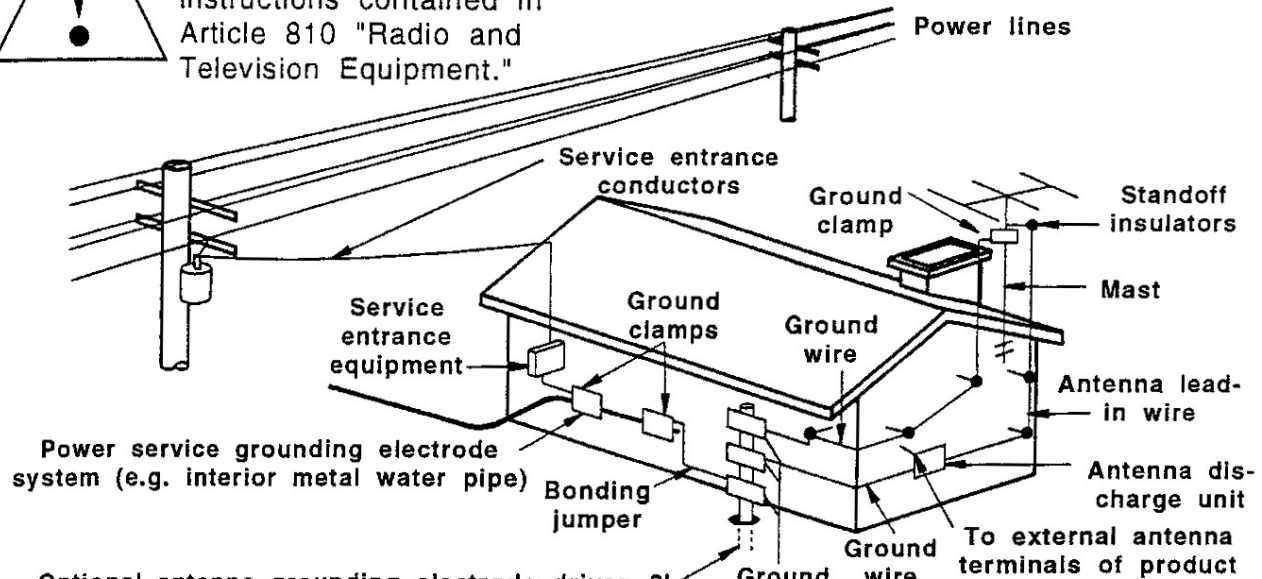
TABLE OF CONTENTS:

GROUNDING FOR PARACLIPSE ANTENNA	4
FOOTINGS	5
MOUNT ASSEMBLY	6
ELEVATION BOLT ASSEMBLY INSTALLATION	7
ACTUATOR INSTALLATION (PLEASE NOTE ACTUATOR NOT SUPPLIED)	8
REFLECTOR AND FEED SUPPORT POLE ASSEMBLY	9
FEED ATTACHMENT AND FEED COVER	10
ELEVATION AND DECLINATION ADJUSTMENT	11
ALIGNMENT PROCEDURE	12
SPECIFICATIONS	13
NOTES	14

GROUNDING FOR PARACLIPSE ANTENNA



Example of antenna grounding according to National Electric Code instructions contained in Article 810 "Radio and Television Equipment."



Optional antenna grounding electrode driven 8' (2.44m) into the earth if required by local codes.

See NEC section 810-21(f)

1. Use #10 AWG (5.3mm) copper, #8 AWG (8.4mm) aluminum, #17 AWG (1.0mm) copper-clad steel or bronze wire, or larger, as a ground wire. Use a 0.625" ground rod 8' minimum into ground.

2. Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4'-6' (1.22-1.83 m) apart.

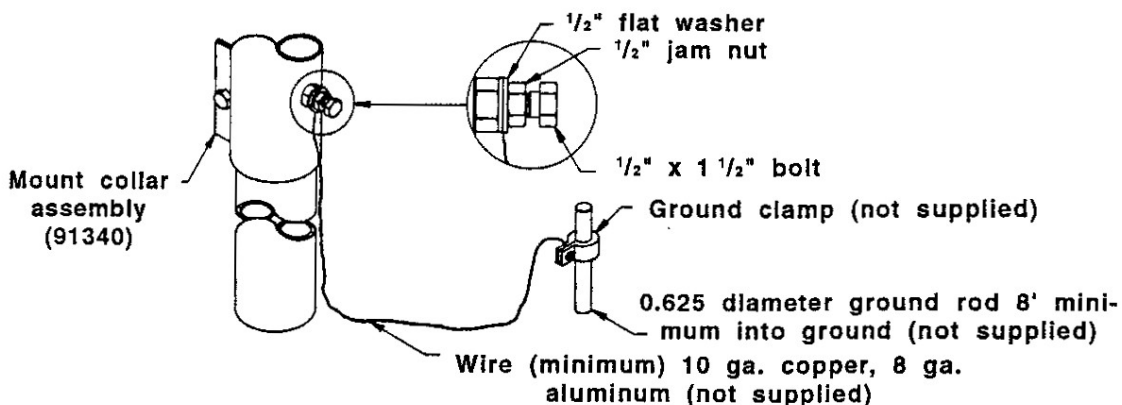
3. Mount antenna discharge unit as close as possible to where lead-in enters house.

4. Use jumper wire not smaller than #6 AWG (13.3mm) copper, or equivalent, when a separate antenna-grounding electrode is used. See NEC section 810-21(i).

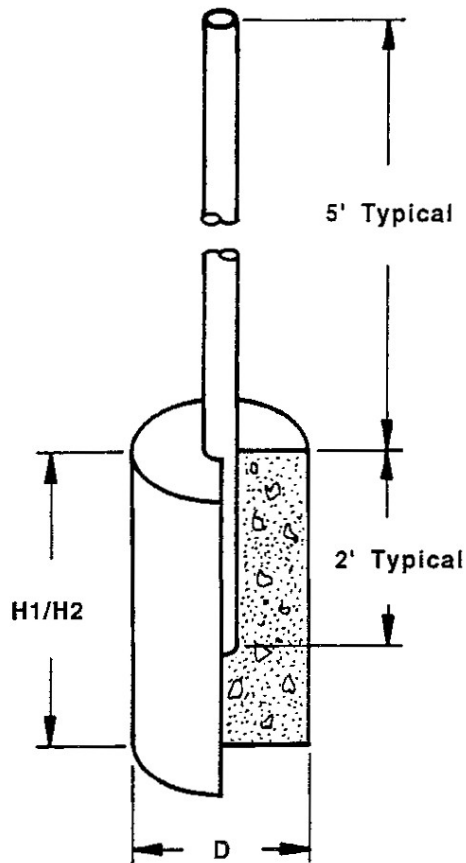
TYPICAL GROUNDING CONFIGURATION

NOTE: This is a typical grounding configuration only. It should be noted that multiple grounding locations may be required to thoroughly ground the

antenna. It is suggested that a ground wire be installed at the mount and at the back hub plate of the antenna.



FOOTINGS



D	Diameter of hole
H1	Depth of hole, natural soil
H2	Depth of hole, paved soil

1. The hole for the antenna footing should be dug in accordance with the chart below in order to adequately support the antenna during violent weather, hard freeze, or muddy conditions. The base pipe must be mounted absolutely plumb in concrete.

2. For a hole depth over 3' we recommend using reinforcing bar in the concrete.

3. **Above ground requirements (please see drawing)** For most areas, 5' of base pipe above the ground is all that is needed. For special clearance requirements (snow, uneven terrain, etc.) add the needed clearance requirement to the standard 5' to determine above ground requirements.

SOIL TYPE	Soft	Medium	Hard	Rock
80-85 mph wind force				
D	1' 7"	1' 7"	1' 2"	1' 0"
H1	4' 6"	3' 6"	3' 6"	2' 0"
H2	3' 0"	3' 0"	2' 6"	2' 0"
90-95 mph wind force				
D	1' 7"	1' 7"	1' 2"	1' 0"
H1	5' 6"	5' 6"	4' 6"	2' 0"
H2	3' 6"	3' 6"	3' 0"	2' 0"

SOIL REFERENCE:

Soft : clayey silts, sandy clays, or silty clays
 Medium : medium dense sand, silty sand, or clayey sand
 Hard : sandy gravel or gravel
 Rock : fractured or solid sandstone or better

NOTE: The soil type determination shall be made by the antenna installer.

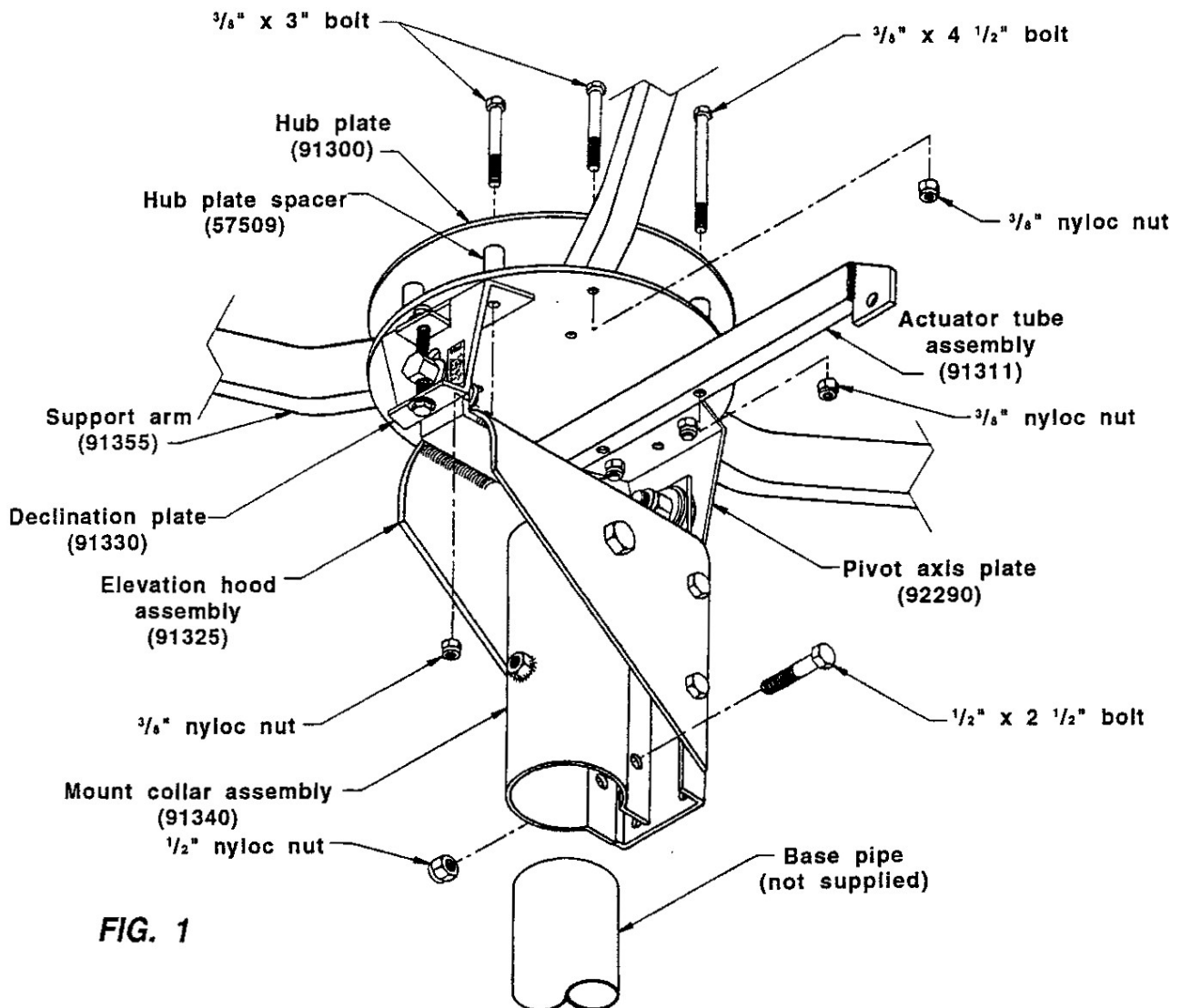
MOUNT ASSEMBLY

1. Slide mount onto base pipe.
(See Fig. 1)
2. Insert one $\frac{1}{2}$ " x $2\frac{1}{2}$ " bolt and one $\frac{1}{2}$ " nyloc nut into the lower holes in the mount collar assembly. Do not tighten. (See Fig. 1)
3. Attach the hub plates to the pivot axis plate and declination plate using four hub plate spacers, two $\frac{3}{8}$ " x 3" bolts, two $\frac{3}{8}$ " x 1" bolts (through the pivot axis plate), two $\frac{3}{8}$ " x $4\frac{1}{2}$ " bolts and six $\frac{3}{8}$ " nyloc nuts. Do not tighten. (See Fig. 1)

NOTE: The actuator tube assembly attaches to the $\frac{3}{8}$ " x $4\frac{1}{2}$ " bolts. If your site is west of 105° W longitude, assemble the actuator tube assembly to the left hand side (facing the back of the mount). If your site is east of 105° W longitude, assemble the actuator tube assembly to the right hand side.

4. Slide the three support arms between the hub plates and attach using five $\frac{3}{8}$ " x 3" bolts, one $\frac{3}{8}$ " x $4\frac{1}{2}$ " bolt (through the center hole in the actuator tube assembly) and six $\frac{3}{8}$ " nyloc nuts. (See Fig. 1)

5. Tighten all hub plate and support arm hardware at this time.



ELEVATION BOLT ASSEMBLY INSTALLATION

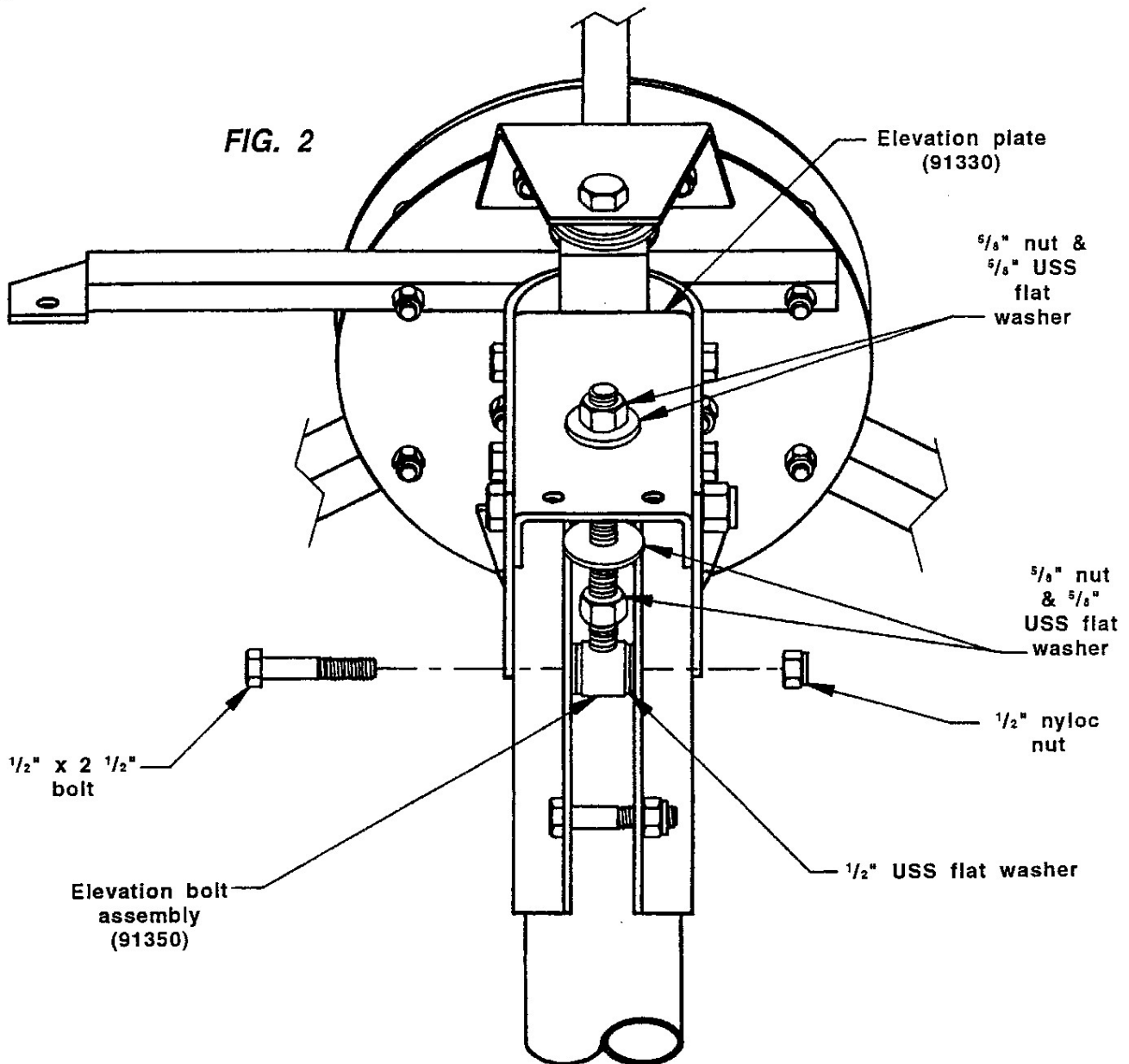
1. Attach the elevation bolt assembly to the mount collar assembly using one $\frac{1}{2}$ " x $2\frac{1}{2}$ " bolt, four $\frac{1}{2}$ " USS flat washers (spacers), and one $\frac{1}{2}$ " nyloc nut. (See Fig. 2)

NOTE: Place two $\frac{1}{2}$ " USS flat washers on either side of elevation bolt assembly and torque to ensure that the mount collar assembly is adequately tightened to base pipe and that no lateral movement can occur. If lateral movement can occur or if mount collar assembly cannot be tightened adequately, add or subtract one

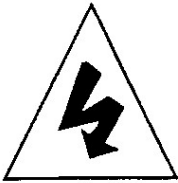
$\frac{1}{2}$ " USS flat washer from each side of the elevation bolt assembly as needed. Improper spacing may result in partial or complete signal loss under high winds.

2. Install one $\frac{5}{8}$ " nut and one $\frac{5}{8}$ " USS flat washer onto the elevation bolt assembly as shown. (See Fig. 2)

3. Slide the elevation bolt assembly through the elevation plate and install the final $\frac{5}{8}$ " USS flat washer and $\frac{5}{8}$ " nut. (See Fig. 2)



ACTUATOR INSTALLATION



1. Attach actuator extension bar to the lower side of the elevation plate with the actuator spacer (open end facing inward) using two $\frac{1}{2}$ " x $2\frac{1}{2}$ " bolts, two $\frac{1}{2}$ " flat washers and two $\frac{1}{2}$ " nyloc nuts. (See Fig. 4)

NOTE: The actuator extension bar should extend to the same side as the actuator tube assembly.

2. Attach the actuator (saddle clamp end) to the actuator extension bar using one $\frac{1}{2}$ " x $2\frac{3}{4}$ " bolt, one $\frac{1}{2}$ " flat washer and one $\frac{1}{2}$ " nyloc nut. (See Fig. 4)

3. Attach the actuator (ball end) to the actuator tube assembly using one $\frac{1}{2}$ " x $2\frac{1}{4}$ " bolt, one $\frac{1}{2}$ " flat washer and one $\frac{1}{2}$ " nyloc nut. (See Fig. 4)

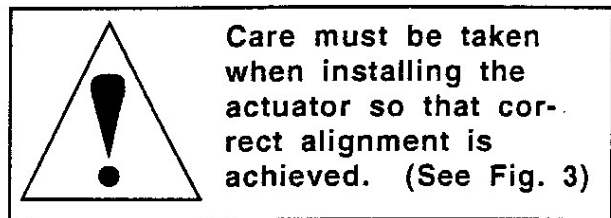
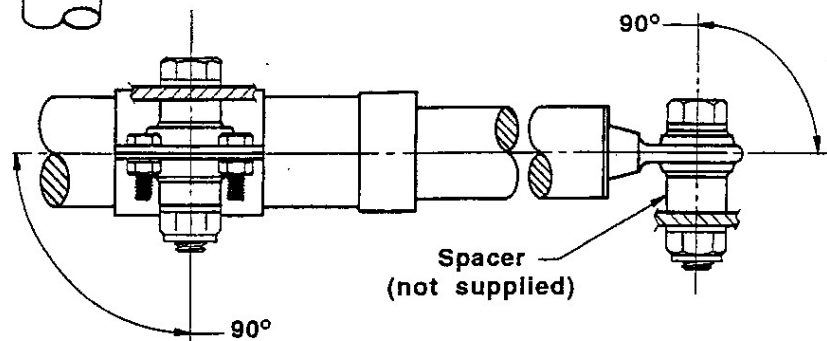
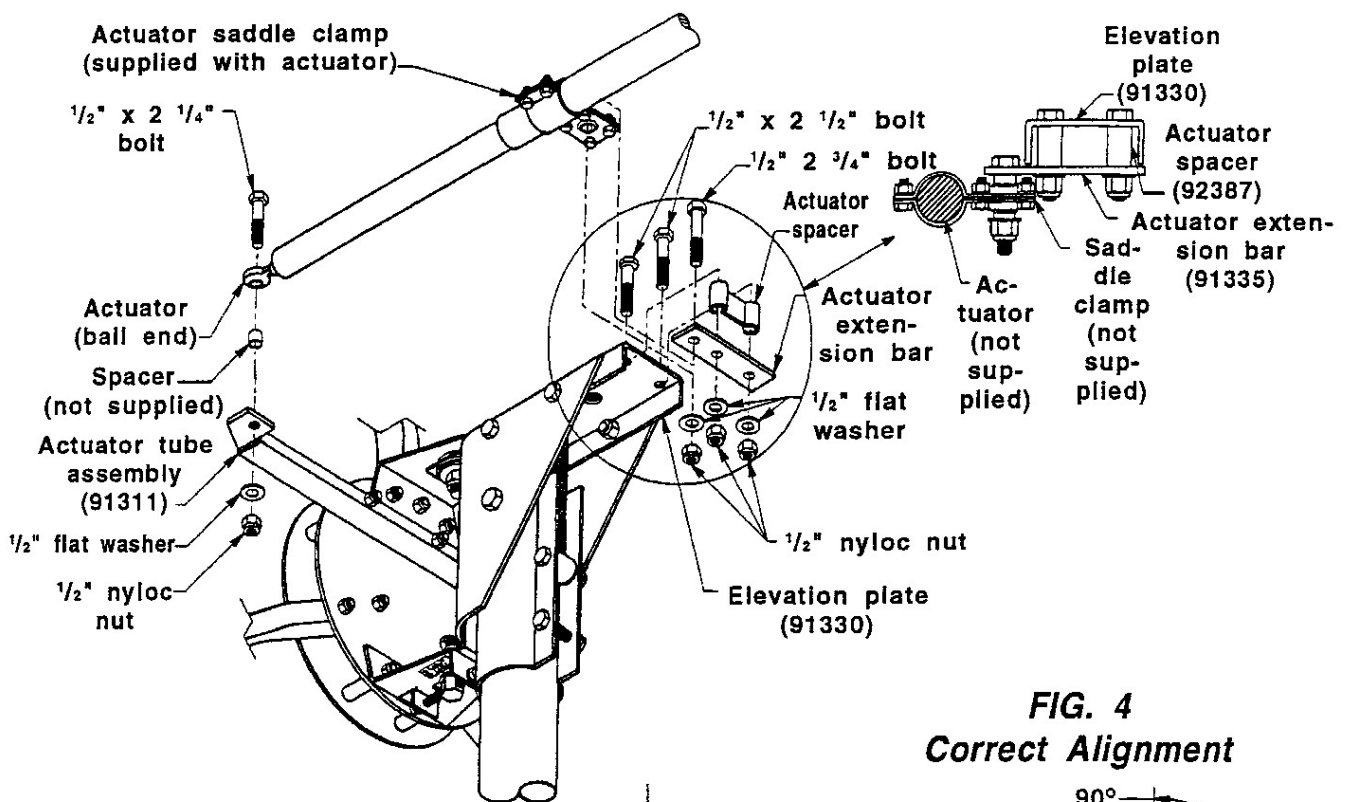


FIG. 4



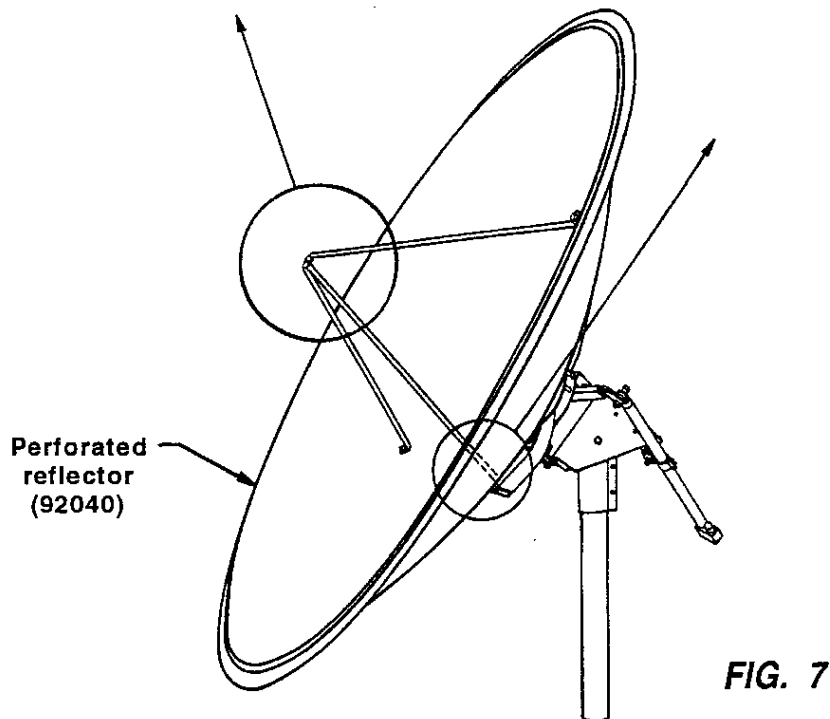
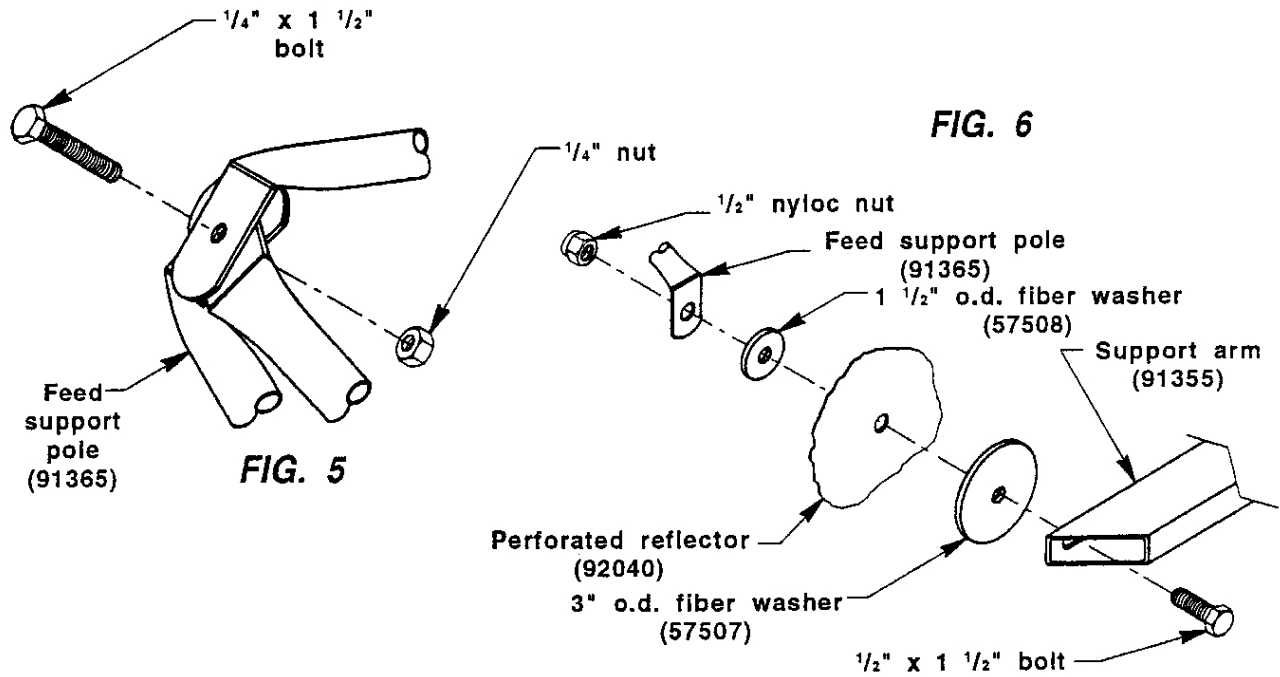
REFLECTOR AND FEED SUPPORT POLE ASSEMBLY

1. Adjust the mount elevation so the hub plate is in a semi-vertical position. (See Fig. 7)

2. Attach the perforated reflector and feed support poles to the support arms using three $\frac{1}{2}$ " x $1\frac{1}{2}$ " bolts, three 3" o.d. fiber washers, three $1\frac{1}{2}$ " o.d. fiber washers, and three $\frac{1}{2}$ " nyloc nuts. Do not tighten. (See Fig. 6)


3. Using one $\frac{1}{4}$ " x $1\frac{1}{2}$ " bolt and one $\frac{1}{4}$ " nut, connect all three feed support poles as shown. This will correctly position the feed support poles for feed centering. (See Fig. 5)

4. Tighten hardware at support arms.



FEED ATTACHMENT AND FEED COVER

1. Attach LNB(s) to the feed as per manufacturer's instructions and preset to Hydro specifications (F/o .34).
2. The LNB wires should be secured to a feed support pole and run through the center hole of the perforated reflector.
3. Remove the $\frac{1}{4}$ " x $1 \frac{1}{2}$ " bolt and $\frac{1}{4}$ " nut that attached the three feed support poles together during installation.
4. Attach the feed and the Hydro feed cover donut to the feed support poles using three $\frac{1}{4}$ " x $1 \frac{1}{2}$ " bolts, six $\frac{1}{4}$ " flat washers, and six $\frac{1}{4}$ " nuts. (See Fig. 8)



FEED ORIENTATION

Be certain that the feed is oriented on the feed support poles according to the feed manufacturer's instructions. Additionally, be certain that the feed is centered in relation to the perforated reflector. The center hole in the perforated reflector can be used as a reference point.

5. Adjust feed to the correct focal length ($27 \frac{7}{8}$ " to $28 \frac{1}{8}$ ").
6. Attach top of Hydro feed cover to the donut using the special cover push nuts provided.

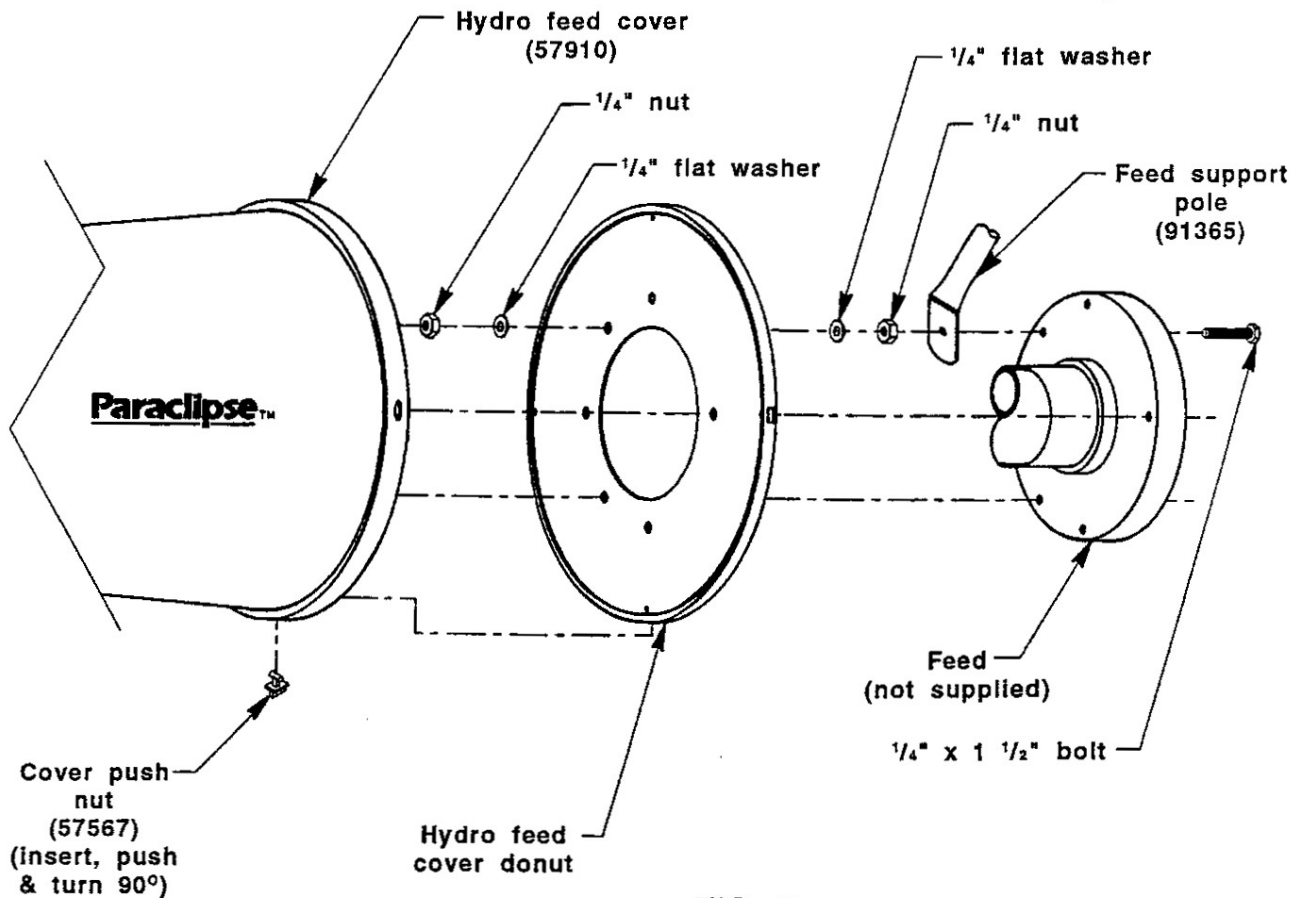


FIG. 8

ELEVATION AND DECLINATION ADJUSTMENT

DECLINATION ADJUSTMENT (Declination is the offset angle of a reflector to the pivot axis.)

1. To adjust the declination, loosen the $\frac{5}{8}$ " nyloc nut on the lower declination pivot. Turn the $\frac{3}{8}$ " x $3\frac{3}{4}$ " bolt (declination adjustment bolt) until the desired declination angle is achieved (corresponding to the chart at right). An inclinometer may also be used to accurately measure the declination angle between reference points "A" and "B". (See Fig. 9)

NOTE: The pivot axis plate has been modified to offer 0° declination. All mounts are pre-assembled for latitudes from 20° to 75° . Changing the azimuth location to the upper bolt hole will allow declination adjustments from 0° to 20° latitude. (See Fig. 10)

2. Retighten all declination hardware.

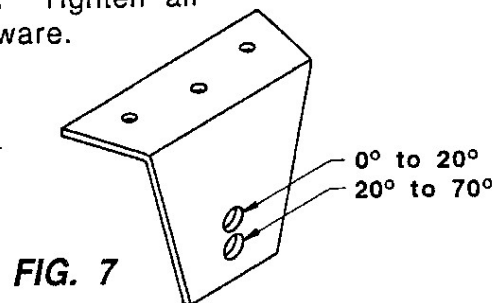
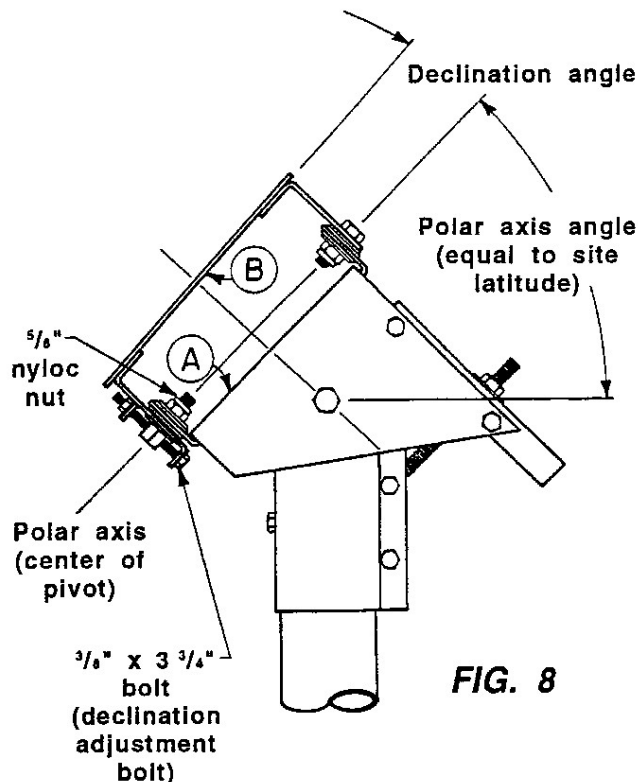
Declination & Elevation Chart			
Polar Axis Angle (Equal to Installation Site Latitude)	Declination (In Degrees)	Polar Axis Angle (Equal to Installation Site Latitude)	Declination (In Degrees)
A	B	A	B
0	.00	32	4.60
2	.30	34	4.85
4	.61	36	5.09
6	.91	38	5.33
8	1.21	40	5.56
10	1.51	42	5.79
12	1.81	44	6.00
14	2.11	46	6.21
16	2.40	48	6.41
18	2.69	50	6.61
20	2.98	52	6.79
22	3.26	54	6.97
24	3.54	56	7.14
26	3.81	58	7.30
28	4.08	60	7.45
30	4.34	62	7.59

ELEVATION ADJUSTMENT (Polar axis angle)

1. To adjust elevation, loosen the $\frac{5}{8}$ " x 5" bolt that goes through the elevation hood assembly.

2. Using an inclinometer and the chart above, adjust the polar axis angle (equal to site latitude). To adjust, rotate the $\frac{5}{8}$ " nuts on the elevation bolt assembly to move the elevation hood assembly to the desired polar axis angle using location "A" as the measurement point.

3. Tighten all hardware.



ALIGNMENT PROCEDURE

1. Set antenna elevation. The elevation will vary with the latitude of your location. Use the Declination & Elevation Chart as a guideline.

2. It is necessary to search for the most southerly satellite from your location. Refer to a "Satellite Guide" or consult your nearest dealer.

Begin with the antenna pointed in a southerly direction (for antenna location sites in northern hemisphere) or northerly direction (for antenna sites in southern hemisphere). To begin searching, turn your receiver on to scan-tune (if your receiver is not so equipped, have someone slowly tune the receiver through the transponders). Next, turn the antenna slightly in the direction of the satellite.

3. Systematically search for the satellite by making one-turn-at-a-time adjustments of the elevation bolt assembly. With each adjustment of elevation, slowly swing the antenna using the motor drive from east to west, while looking for a signal on your television.

NOTE: If no signal can be found re-check the antenna elevation/declination, north-south alignment and plumb of mount. If no problem is found with the mechanical alignment, consult the owner's manual for your receiver or call your local dealer.

4. When you find your first satellite, turn off the scan-tune and adjust to an active transponder (channel).

5. Carefully adjust elevation and azimuth to maximum signal strength using the signal strength meter on your receiver; or, if available, use a digital or analog volt-ohm meter (VOM). You may also adjust visually by observing your television for the best picture.

6. Turn on scan-tune once again and swing antenna, using the motor drive while looking for other satellites. If no other satellites are "visible," or you can not receive all the satellites (and your signal path is not blocked), the mount is not aligned to true north/south.

7. North/south alignment:

NOTE: If installation is located east of 105° W longitude, reverse all "west/east" and "raise/lower" references.

a) Swing antenna to the most westerly satellite and adjust azimuth and elevation for absolute maximum signal. Swing antenna to the most easterly satellite and do same. If any azimuth or elevation adjustments is required to peak signal on this satellite, the north/south alignment will still need minor correction.

b) If you raise the antenna with the elevation bolt assembly to improve the picture, rotate the mount slightly (a fraction of an inch) counter-clockwise. If you lower the antenna to improve the picture, rotate the mount slightly clockwise.

c) Repeat steps a) and b) until there is no adjustment needed from the most westerly to the most easterly satellites.

8. While observing a signal strength meter or watching the television picture, retighten all nuts and bolts on the mount firmly to ensure that the signal remains at maximum. Recheck antenna tracking from west to east to make sure the mount has not moved.

Your **PARACLIPSE** antenna is now aligned to track the Clarke orbit belt. Therefore, complete your wiring to the television viewing location per instructions provided with your receiver.

SPECIFICATIONS

C Band gain	37.8 dBi
KU Band gain	47.0 dBi
C band efficiency	67%
2 degrees Spacing approved (C & KU)	Yes
C Band 3dB beam width	2.2 degrees
C Band first side lobe	-24.5 dB
C Band antenna temperature	48 degrees K
F/D	0.312
Focal point	28.125
Wind survival (with opposite polarization of satellites) (please see warranty policy)	100 mph in stowed position

NOTE: Different feed horn designs call for special mounting and focal requirements. Call for correct application or follow manufacturer's suggestions.

NOTES

Paracclipse®

HIGH PERFORMANCE ANTENNAS
Your Complete Reflector Source

2271 29th Avenue East
Columbus, NE 68601
Tel: 402-563-3625
FAX: 402-564-2109

